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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/589,508

08/15/2006

Tatsuo Makii

SON-3190

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7590

08/13/2009

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LION BUILDING

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WASHINGTON, DC 20036

EXAMINER

TEJANO, DWIGHT ALEX C

ART UNIT

PAPER NUMBER

2622

MAIL DATE

DELIVERY MODE

08/13/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/589,508

Applicant(s)

MAKII, TATSUO

Examiner

Dwight Alex C. Tejano

Art Unit

2622

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 May 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2 and 4-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 4-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 August 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/S508)
- Paper No(s)/Mail Date _____

- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Status of Claims

Claims 1, 2, and 4 – 13 are now pending in this application and are addressed herein. Acknowledgement is hereby given that claims 7 – 13 have been added to the present application and that claim 3 has been totally canceled without prejudice or disclaimer.

Response to Arguments

Applicant's arguments with respect to claims 1, 2, and 4 – 13 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1, 2, 5, and 6 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1, 2, 5, and 6 recites the limitation "the detected data" in the third paragraphs of the respective claims. There is insufficient antecedent basis for this limitation in the claim. For the purposes of prior art rejection, this phrase is assumed to mean "a data corresponding to a detected position."

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2, and 4 – 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ogino (US 6144805 A) in view of Nakashima (US 6473567 B1) and further in view of Maeno (US 5887201 A.)

Regarding **claim 1**, Ogino discloses a lens barrel assembly (Fig. 1) having a movable lens (102) disposed in a lens barrel (2) for movement along an optical axis (105), an actuating mechanism (5) for moving the movable lens along the optical axis, and a control means (15) for controlling said actuating mechanism.

Ogino further discloses that the actuating mechanism has an externally threaded member extending parallel to the optical axis (5a), a motor for rotating the externally threaded member ("stepping motor or voice coil motor," c. 4, ln. 43 – 61), an internally threaded member (102b) nonrotatably threaded over the externally threaded member for movement along the externally threaded member into abutment against the movable lens in response to rotation of the externally threaded member (c. 4, ln. 43 – 61.)

Ogino also discloses a position detecting means (21, 8a, 8b) for detecting a position of the movable lens along the optical axis and generating position data corresponding to the detected data (c. 5, ln. 11 – 24.)

Ogino additionally teaches a control means (13) comprising a controller (15) for controlling an angular displacement of said motor in order to equalize the position of the movable lens along the optical axis to a target position based on the positional data supplied from the position detecting means (Fig. 4, read from photointerruptors instigate a drive in the VAR lens.)

Finally, Ogino discloses that the controller establishes positional data when the motor is de-energized as a reference position for a distance over which the movable lens is to move along the optical axis or a position to which the movable lens is to move along the optical axis (c. 4, ln. 62 - c. 5, ln. 17; c. 6, ln. 56 – 53; and Fig. 7) In this case, the established reference position data is established in the controller ahead of time before the lens is driven (when the motor is de-energized.)

Despite all of this, Ogino fails to disclose an urging means as required by the present application. However, the Examiner maintains that it was well-known in the art to include an urging means, as demonstrated by Nakashima.

As disclosed in the previous Office Action dated February 3, 2009, Nakashima discloses an actuating mechanism that has an externally threaded member extending parallel to the optical axis (10a), a motor (10), an internally threaded member (11), and an urging means (12.)

As mentioned in the Reply to Office Action dated May 1, 2009, Nakashima discloses an urging member (12) "that is arranged to urge the holding member and moving member to move together in the optical axis direction and permits relative

movement of the holding member and moving member" (p. 11.) Additionally, the Reply states that "a stopper is arranged to have the holding member about the moving member if the urging member urges the moving member to come into close proximity of the holding member" (p. 12.) This constitutes the urging means as required by the present claim.

Both actuating mechanisms in Ogino and Nakashima have the same ultimate function: to move the lens group along the optical axis. However, Nakashima's setup has the advantage that the motor required to move the lens does not need as much torque to shift the lens, as some of the necessary force would come from the spring's internal resistive force. Additionally, the conventional arrangement of Ogino is prone to a disengagement from the motor when an external force acts upon the assembly (c. 1, ln. 28 - 40.)

Therefore, it would be obvious to one of ordinary skill in the art to modify Ogino's actuating section to add the urging elements Nakashima's setup. Not only is this particular modification a simple change, as both lens assemblies take approximately the same size and have the same ultimate function, but this would also allow protect Ogino's system against unwanted external forces and allow use of a lower powered and smaller motor.

After all of the above, the combination of Ogino and Nakashima fails to specifically disclose that the controller judges when the movable lens is forcibly stopped against movement and immediately de-energized if the positional data remains

unchanged for a predetermined period of time while the motor is in rotation. However, the Examiner maintains that this, too, was well known in the art, as taught by Maeno.

Maeno discloses a camera driving stop apparatus that has a control means comprising a controller (9) for controlling an angular displacement of the motor (1) in order to equalize the position of the movable lens (2) along the optical axis (A) to a target position based on positional data supplied from the position detecting means (4.) Maeno also discloses that the controller judges that the movable lens is forcibly stopped against movement (forcible energization stop unit, 7) and immediately de-energizes the motor if the positional data remains unchanged for a predetermined period of time while the motor is in rotation (Fig. 15, S7 to S9 to S12.)

While the combination of Ogino and Nakashima does not disclose that the controller does the above actions, it would be obvious to one of ordinary skill in the art to include the camera driving stop apparatus of Maeno into the control circuit of Ogino. The stop apparatus not only prevents overdrive of the motor outside of the boundary of the lens barrel, but this also prevents the variations in the driving unit in reaching the desired position (Maeno, c. 1, ln. 66 – c. 2, ln. 6.)

Claims 2, 5, and 6 are variations of claim 1 and are thus rejected accordingly.

Regarding **claim 4**, the combination of Ogino, Nakashima, and Maeno disclose the limitations of claims 1 and 2. Additionally, Nakashima discloses a guiding mechanism disposed in the lens barrel for guiding the movable lens along the optical

axis having a guide shaft (3, 4) extending along the optical axis and engaging in a bearing on the movable lens (lens frame, 8) for guiding the movable lens along the optical axis. Nakashima also discloses an urging means including a helical spring coiled around said guide shaft and having an end resiliently held against the bearing and the other end resiliently held against the lens barrel (32.) Because these elements are part of the already combined system, these elements are considered disclosed by the combination of Ogino, Nakashima, and Maeno.

Regarding **claim 7**, the combination of Ogino, Nakashima, and Maeno disclose the limitations of claim 1. Additionally, Ogino discloses a second externally threaded member extending parallel to the optical axis (6a), a second motor for rotating the second externally threaded member (6), a second internally threaded member nonrotatably threaded over the second externally threaded member for movement along the second externally threaded member into abutment against a second movable lens in response to rotation of the second externally threaded member (104b.)

Ogino also discloses a second position detecting means for detecting a position of the second movable lens along the optical axis and generating second positional data corresponding to a second detected data (23.)

Ogino additionally teaches a control means (13) comprising a controller (17) for controlling an angular displacement of said second motor in order to equalize the second position of the second movable lens along the optical axis to a second target

position based on the second positional data supplied from the second position detecting means (Fig. 4, read from photointerruptors instigate a drive in the RR lens.)

However, as in claim 1, Ogino fails to disclose a second urging means and that the controller judges the forcible stopping of the second movable lens as required in the claim. Despite this, the combination of Nakashima and Maeno fills these discrepancies in the exact same way as in claim 1 (i.e., modifying the first lens group as shown in the rejection to claim 1 can also be done to the second lens group for the same motivation as previously shown.)

As such, claim 7 is considered disclosed by the combination of Ogino, Nakashima, and Maeno.

Regarding **claim 8**, the combination of Ogino, Nakashima, and Maeno disclose all of claim 5. The additional limitations are reproductions of claim 7 and are thus rejected accordingly. The final limitation in which the controller establishes second positional data when the second motor is de-energized as a second reference position for a distance over which the second movable lens is to move along the optical axis or a second position to which the second movable lens is to move along the optical axis is disclosed by Ogino (c. 4, ln. 62 - c. 5, ln. 17; c. 6, ln. 56 – 53; and Fig. 7), demonstrating that the reference positions establishment is mirrored in both the first and second lens groups.

Claims 9 – 11 are variations of previously rejection claims and are thus rejected accordingly.

Regarding **claim 12**, the combination of Ogino, Nakashima, and Maeno disclose all of claim 7. Similar to the rejection of claim 4, the guiding mechanism of Nakashima discloses all of the limitations of claim 12. Because these elements are present in the combination of Nakashima and Ogino's second lens group, these limitations are considered disclosed by the combination.

Claim 13 is a variation of the previously rejected claims and is thus rejected accordingly.

Citation of Pertinent Art

The prior art made of record is considered pertinent to the applicant's disclosure, but is not relied upon as a reference for the preceding sections:

- Nomura (US 20040151490 A1) discloses an optical lens barrel with separate lens groups.
- Sato (US 7529038 B2) discloses a lens barrel with two separate, independently movable lens groups.
- Noguchi (US 7391965 B2) discloses a lens apparatus.
- Imai, et al. (US 7418200 B2) discloses an optical unit and imaging device.
- Ishizuka, et al. (US 20050207748 A1) discloses a retractable lens system, with two movable lens groups.
- Takeshita (US 6339681 B1) discloses an optical apparatus with two movable lens groups.
- Honjo, et al. (US 20070133970 A1) discloses a lens driving apparatus with two movable lens groups, a detection unit, and separate motors.
- Kaneda, et al. (US 4920369 A) discloses a lens position control device with a zoom lens and a focus lens with separate motors and controls.
- Ueyama (US 5264963 A) discloses a varifocal lens assembly with multiple lens groups.
- Higuchi, et al. (US 5301066 A) discloses a lens barrel.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dwight Alex C. Tejano whose telephone number is (571) 270-7200. The examiner can normally be reached on Monday through Friday 10:00-6:00 with alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (571) 272-3022. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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